

XIX.—*Results of a Collecting Trip in the Cantabrian Mountains, northern Spain.* By H. F. WITHERBY, M.B.O.U.

(Plates III. & IV.)

As scarcely any material was available from the western side of northern Spain for comparison with birds from Portugal and elsewhere in the Peninsula, I determined to make a collecting trip to that region.

Accordingly my wife and I sailed from Southampton, bound for Vigo, in the Royal Mail steamer 'Arlanza' on 16 September, 1921. Crossing the Bay of Biscay on 17 September, we had eight Turtle-Doves, one Spotted Flycatcher, one Yellow Wagtail, one Common Wheatear, and one Sanderling come on board, the Turtle-Doves staying all day, for the most part perched with wings half spread on the wireless mast. On the 18th, when sailing down the Spanish coast between La Coruña and Vigo, we saw several Gannets (all "piebald"), *Larus fuscus fuscus* and *Larus fuscus affinis* and a few *Larus argentatus cachimans*. In April 1920 the Mediterranean Herring-Gull was very plentiful along this part of the coast (where they breed), and their comparative scarcity in September may indicate an autumn movement. Perhaps the most interesting birds we saw on this day, however, were numbers of *Puffinus kuhlii*. Whether these were of the Mediterranean or the Atlantic form of course I cannot say, but they were in very considerable numbers. It was a beautifully clear and bright day, and all the way between La Coruña and Vigo the ocean was dotted with small parties of these Shearwaters. They were constantly going down to the water and sitting on the surface, evidently engaged in getting food of some kind. There were a good many porpoises about, and these apparently caused some food to come to the surface in considerable quantity as the Shearwaters constantly collected round them, often as many as twenty at a time. So far as I know, *P. kuhlii* does not breed north of the Berlenga Islands, off

Lisbon, where Mr. W. C. Tait found them in 1879, and it was surprising to see them in such large numbers more than 200 miles to the north.

Arrived at Vigo, we received every possible assistance from Mr. T. Guyatt, H.B.M. Consul, with whom I had been in correspondence for some time. Mr. Guyatt took the greatest interest in our trip, and had it not been for his very kind assistance, it would have been impossible to have made a successful collecting trip in so short a time, but Mr. Guyatt smoothed the way for guns and cartridges and permits, and provided us with information of all kinds. I must also here record my sincere thanks to Señor E. Duran, C.B.E., of Vigo, for much assistance, to Mr. M. W. McKenzie, H.B.M. Vice-Consul at Rivadesella, who gave us most valuable information about the Picos de Europa region, and to Mr. Abel Chapman, who also supplied me with useful information.

At Vigo we were joined by Señor A. P. Lopes, who had accompanied us as a skinner the year before in Portugal; and one could not wish to have a better and quicker skinner, or a more cheerful and willing companion than Lopes. The difficulty always was to give him enough to do, for he much disliked being unemployed and was not accustomed to collecting himself.

We travelled by rail to Leon, where we stayed a day to interview the Governor of the Province, who very kindly provided us, at the request of Mr. Guyatt, with a most effective permit, which not only allowed us to collect freely, but bid everyone concerned to assist our "misión científica" to their utmost ability.

Thus armed we arrived at Riaño after a five hours' motor diligence ride from Leon at mid-day on 23 September, and immediately set to work. Riaño is a small village devoted to goats, sheep, cows, and pigs in a valley at an elevation of 3300 feet on the south-west side of the Picos de Europa and in the north-east corner of the province of Leon. We were very comfortably housed in the Fonda Montanes, a small and primitive but clean inn, where we

were very well fed. I may here state that all the inns we stayed at in this somewhat remote district were clean and good, while the people of the country were delightful—always ready to help and never interfering or inquisitive.

From Riaño we went by motor diligence to Cangas de Onis, passing through a remarkably long, winding, and very narrow gorge. A short light railway from Cangas took us up to Covadonga, where there is a large hotel as well as a shrine and a cathedral, to which many make pilgrimage. As the valley here was too steep and too cultivated to make a good collecting ground, we journeyed by motor diligence *via* Carreña and Panes to Potes, this being a two days' journey, with a stop for the night at Carreña. Between Panes and Potes is another long and very narrow gorge, similar to that near Cangas. Potes, in the province of Santander and on the eastern side of the Picos de Europa, is a considerably larger village than Riaño and, lying lower (about 1100 feet above sea-level), has more cultivation. To reach good collecting ground here we had to travel much farther away from our inn than was necessary at Riaño. From Potes we returned to Panes, which is on the border of the province of Asturias, and collected there for a few days. This village is only about 300 feet above sea-level and the hills round it are only small. From Panes we returned home *via* Santander, Bilbao, San Sebastian, and Paris.

All our collecting was done at Riaño (23 September to 2 October), Potes (5 to 13 October), and Panes (14 to 19 October).

Both Riaño and Potes are in valleys with fair trout streams, the river Esla at Riaño being rather broad and shallow, while the Deva at Potes is narrow and for the most part hidden and almost inaccessible in a deep-cut channel. All along both rivers Dippers were more numerous than I have seen them anywhere else, while both White and Grey Wagtails were common. In these main valleys Chaffinches, Serins, Buntings (Yellow, Cirl, and Rock), and Blackbirds were also common, as were Song-Thrushes at Potes, though the latter were much scarcer at Riaño.

Branching off the main valley were numerous small and usually very narrow and winding valleys with steep sides. On the lower ground at Potes these were covered with scrub or small cork-oak and ilex trees, with here and there Spanish chestnut. This we did not find a good ground for birds, but at Riaño and in the higher ground near Potes were valleys whose sides were often thickly covered with woods, consisting chiefly of oak, hazel, and some small beech, while down the middle were often poplars, ash, and other trees and, near Potes, walnuts. The oak woods were either very thick, the trees being pollarded and the undergrowth almost impenetrable, or much more open, with the trees high and trimmed to the top.

In all these woods, but chiefly in the thicker ones, Jays, Chaffinches, Robins, Tits, Nuthatches, Creepers, and Firecrests were plentiful, while Woodpeckers of three species (Green, Great Spotted, and Middle Spotted) and other birds were met with here and there. During the whole of our stay birds were very silent indeed, and the woods being very thick, collecting was not easy.

There was also much open ground in the region of the higher woods, often with good turf, carpeted with the lovely blue-mauve autumn crocus, slopes of heather, broom-scrub, and scattered thorn-trees. Here were Stonechats, Black Redstarts, a few Wheatears and Hedge-Sparrows, and often companies of Mistle-Thrushes and parties of Carrion-Crows.

Above the woods (at about 4000 feet) one generally came to rock-strewn slopes, thinly covered with grass, before reaching the bare pale grey limestone peaks. On these slopes Red-billed Choughs fed and the Grey Partridge was seen, while on the rocky peaks were more Choughs and Black Redstarts with, usually, Kestrels flying around. But we did not penetrate into the high, rocky Picos de Europa themselves where H.M. the King of Spain hunts chamois, as this meant a considerable expedition, which we thought hardly worth while, in view of the few birds likely to be met with and the short time at our disposal. Irby records

the Wall-Creeper and Alpine Accentor, and Gadow states that he observed the Snow-Finch in the Picos.

At Panes the river was broader and bordered with alders, poplars, and willows with many briar thickets. Here we found Chaffinches, Goldfinches, Tits (especially Long-tailed), Creepers and Firecrests with many Blackbirds, Song-Thrushes, Robins and Wrens, while Chiffchaffs were common and Blackcaps more frequent than elsewhere. Here also we found Cetti's Warbler, which we did not meet with elsewhere. In the low hills round Panes were many thickets of hazel and thorn, while most of the large trees were Spanish chestnuts, but many of these were dead. On this ground we found most of the birds we had seen in the woods at Riaño and Potes, but Middle Spotted Woodpeckers were apparently absent and Marsh-Tits were scarcer.

Nowhere in all this region did we see any conifers, and the absence of cistus, so plentiful in most parts of Spain and Portugal, was most marked.

Potes was visited by Lilford and Irby in May and June 1876, and the latter published a paper on the birds they found in 'The Ibis' for 1883 (pp. 173-190). Comparing the species found by these two ornithologists with those we met with and omitting the summer migrants, most of which had left by the time we arrived, we find some differences worth remarking upon, but it is not always possible to be sure of the locality Irby refers to, as many of his observations were made on the coast near Santander.

He records Griffon and Egyptian Vultures and Lammergeyer as common near Potes, especially in the gorge. We saw no Vultures of any kind. It is true that we passed through the gorge rapidly in a closed motor diligence, but it seems curious that we did not see these birds soaring near Potes. Irby also mentions the Hen-Harrier as common, but in this case I think he means near the coast and not in the mountains. We saw no Harriers. Nor did we see any Eagles, and Irby mentions Golden, Bonelli's, and Booted Eagles. Again he mentions the Honey-Buzzard as common

in the beech forests of Llebana. Dr. H. Gadow, in his book 'In Northern Spain,' also refers to the beech forests near Potes and at Riaño, but we failed to find them, and I cannot but think that the woods in these parts have been largely altered by cutting. There may still be beech forests hidden in some high valleys, but those woods which we explored were mainly of oak, and the largest trees were not more than about sixty or seventy years old. At the head of one valley near Riaño at about 4000 feet we saw a dozen or so very large beech-trees, which were probably the remains of one of the forests referred to. The Honey-Buzzard we did not see, but they may have migrated and may still inhabit this country in summer, but this could not be so with the Black Woodpecker which Irby also found frequent in the higher woods. We failed also to find these birds and no one we asked seemed to know them. It is to be hoped that some exist in woods we did not visit, as the bird is not found elsewhere in the Peninsula beyond the Pyrenees. Another interesting species not found elsewhere in the Peninsula is the Capercaillie, which Irby mentions as having both seen and heard. We did not have the same good fortune, and evidently the bird is now very rare. Occasionally one is shot in the spring and usually sent to Madrid, the shooters, we were told, getting as much as 20 pesetas for a bird.

The most interesting species which we found was the Middle Spotted Woodpecker (not known in the Pyrenees, but it may breed in Murcia, see Saunders, *Ibis*, 1871, p. 66), and the Marsh-Tit, whose distribution in Spain is extremely local, and possibly it breeds only in the Pyrenees and Cantabrians. The Song-Thrush was another interesting species, since on Irby's evidence it breeds here. The only other district in Spain where it may breed is in the Sierra de Gredos, where it was heard singing in mid-May, as recorded by Chapman and Buck in 'Wild Spain,' p. 147.

Magpies, Jackdaws, and Starlings were absent from the mountainous region. Another notable absentee was the Crested Lark, so common in most parts of the Peninsula. As I have before remarked, most of the summer birds had

left; but even if we add those noticed by Irby, the region is not rich in species, and I think this may be accounted for by a sameness in the character of the country. Among the summer birds mentioned by Irby the Willow-Warbler and Red-backed Shrike, recorded as common, should be noted, as it seems doubtful if either of these breeds farther south in the Peninsula.

The chief interest in our collection lies in the geographical forms of the resident species. The distribution of geographical forms in the Iberian Peninsula presents a problem which appears at present very complex, but this may be due to the scanty knowledge we still possess of the subspecies occurring in various parts of Spain. A delightful collecting tour in northern Portugal in 1920, in company with Mr. W. C. Tait, the veteran ornithologist of Oporto, supplemented by many skins sent to me from time to time during the last eight years by Mr. Tait, has given me material to determine the subspecies resident in Portugal from the Tagus northwards. Recently Surgeon-Admiral Stenhouse has published an excellent paper (*Ibis*, 1921, pp. 573-594) on a collection made by him in the neighbourhood of Algeciras, and by his kindness I was privileged to compare these birds and others collected by Captain Lynes with those from

	<i>Pyrenees.</i>	<i>Cantabrians.</i>	<i>N. Portugal.</i>	<i>Algeciras.</i>
A {	<i>Ægithalos c. taiti.</i>	<i>Æ. c. taiti.</i>	<i>Æ. c. taiti.</i>	<i>Æ. c. irbii.</i>
	<i>Turdus m. merula.</i>	<i>T. m. merula.</i>	<i>T. m. merula.</i>	<i>T. m. algeria.</i>
	<i>Troglodytes t. troglodytes.</i>	<i>T. t. troglodytes.</i>	<i>T. t. troglodytes.</i>	<i>T. t. kabylosum.</i>
B {	<i>Sitta c. caesia.</i>	<i>S. c. caesia.</i>	<i>S. c. hispaniensis.</i>	
	<i>Parus c. caeruleus.</i>	<i>P. c. caeruleus.</i>	<i>P. c. harterti.</i>	<i>P. c. harterti.</i>
	<i>P. cristatus mitratus.</i>	<i>P. c. mitratus.</i>	<i>P. c. weigoldi.</i>	<i>P. c. weigoldi.</i>
	<i>Saxicola t. rubicola.</i>	<i>S. t. rubicola.</i>	<i>S. t. hibernans.</i>	<i>S. t. rubicola.</i>
	<i>Erithacus r. rubecula.</i>	<i>E. r. rubecula.</i>	<i>E. r. melophilus.</i>	<i>E. r. witherbyi.</i>
C {	<i>Garrulus g. glandarius.</i>	<i>G. g. fasciatus.</i>	<i>G. g. fasciatus.</i>	<i>G. g. fasciatus.</i>
	<i>Carduelis c. carduelis.</i>	<i>C. c. weigoldi.</i>	<i>C. c. weigoldi.</i>	<i>C. c. weigoldi.</i>
	<i>Parus a. ater.</i>	<i>P. a. vieira.</i>	<i>P. a. vieira.</i>	
	<i>Cinclus c. pyrenaicus.</i>	<i>C. c. cinclus.</i>	<i>C. c. cinclus.</i>	
	<i>Picus v. virescens?</i>	<i>P. v. sharpei.</i>	<i>P. v. sharpei.</i>	<i>P. v. sharpei.</i>
	<i>Dryobates m. pinetorum.</i>	<i>D. m. hispanus.</i>	<i>D. m. hispanus.</i>	<i>D. m. hispanus.</i>

Portugal. In the preceding table I have set out a comparison of the geographical races of some of the resident species in these two regions, the Cantabrian Mountains and the Pyrenees.

It will be seen that of these: (*a*) three are the same in the Pyrenees, Cantabrians, and north Portugal, and that all these three are different in south Spain; (*b*) five, the same in the Pyrenees and Cantabrians, are different in Portugal; and (*c*) six, the same in the Cantabrians and Portugal, are different in the Pyrenees.

Those under (*b*) and (*c*) especially form a puzzling mixture of forms. While I have no satisfactory explanation of these apparent anomalies to offer, it may be of some interest to point to the following considerations. The Cantabrian Mountains are practically continuous with the Pyrenees and spurs of the chain run down from its western end into north Portugal. Thus there seems no definite isolating barrier between northern Portugal and the Pyrenees. Yet in group (*b*) we have four races (Blue Tit, Crested Tit, Robin, and Stonechat) which are distinctly more richly coloured and darker and two of them smaller in Portugal than in the Cantabrians and Pyrenees, while another (Nuthatch) is less richly coloured but also smaller. In group (*c*) we have four birds (Jay, Goldfinch, Coal-Tit, and Dipper) in Portugal and the Cantabrians which are distinctly darker (and in the Goldfinch and Coal-Tit smaller) than those in the Pyrenees.

In studying these differences all possible factors should be considered, and as it has often been stated that humidity plays a part, I subjoin a table of the values of the relative humidity at various stations, which has been most kindly supplied to me by the Meteorological Office, Air Ministry. The figures in this table indicate the ratio of aqueous vapour in a measured volume of air to the amount which the volume would contain if the air were saturated. The figures for each month have been supplied, but as the monthly variations at the different stations are fairly similar I give only the yearly mean.

VALUES OF RELATIVE HUMIDITY in per cent. at
various European Stations.

	Annual Mean.		Annual Mean.
Bergen (W. Norway)	77	Bagnères-de-Bigorre (about centre of N. side Pyrenees)	71
Christiania (S. Norway)	73	Oviedo (Asturias, N. Spain, near Picos de Europa)	79
Berlin (Germany).....	75	Pontevedra (Galicia, west coast, N. Spain)	75
Hamburg (Germany)	81	Lisbon (Portugal).....	70
Dunkirk (N.W. France)	75	Gibraltar	75
Aberdeen (E. Scotland)	80	Seville (S. Spain).....	62
Kew (England).....	79	Malaga (S.E. Spain)	65
Falmouth (S.W. England)	83	Madrid (Central Spain)	64
Valentia (S.W. Ireland)	84	Barcelona (N.E. Spain)	68
Munich (Bavaria).....	80		
Paris (France)	74		
Bordeaux (S.W. France).....	75		

While this table certainly shows that the middle and eastern side of Spain is dryer than the Atlantic side and the north, I think it will be agreed that it does not assist us in the problems presented in the distribution table given above, nor indeed in a comparison of British and Continental races.

It may be very true to say that we do not yet know what are the environmental factors which may produce a change in the coloration of a bird, but I think proof must be given before we can state that a difference is due merely to environmental causes acting upon each individual after its birth.

Beebe's experiments certainly prove that an individual bird does become darker in successive moults when subjected, under certain conditions, to a very humid atmosphere, but unfortunately his experiments stopped at this point. He did not breed birds in these conditions.

Dr. Lowe, in his stimulating paper on species and subspecies (*Ibis*, 1922, p. 185), mentions the case of the Bermuda Goldfinch, and holds that its distinctive coloration would not be inherited. If this is really the case, then it seems necessary also to believe that the dark pigment is increased so rapidly that each individual attains the distinctive difference of the race at all events when it moults its juvenile

plumage (say two or three months after hatching), and in some cases even when it attains its juvenile plumage, ten days or so after hatching. Beebe's experiments, on the other hand, show that the change in the individual is gradual; and this may be so in certain birds in a state of nature, but in such cases the variation among individuals, according to their age, would be so great that we should certainly not accept the differences as sufficiently constant to constitute a good form. To make my meaning clearer, the Bermuda Goldfinch must have shown its distinctive characters in the very first brood hatched in the island if Dr. Lowe's explanation is to be accepted. If, on the other hand, the whole race, as apart from individuals, has changed gradually, then surely this must have been due to something which was transmissible.

In the following list a dagger mark is affixed to those birds which we identified but did not obtain.

† **Corvus corax.**

Ravens were seen or heard nearly every day, but they were not plentiful. I have seen no skins from north Spain or Portugal, so cannot say if they belong to the form *hispanus*, which inhabits south Spain.

Corvus corone corone L.

Common and usually in family parties. One obtained is exactly like typical birds.

Garrulus glandarius fasciatus Brehm.

Garrulus glandarius kleinschmidti Hartert, Vög. pal. F. i. p. 30.

Jays were common in all the woods. Six obtained agree with this form, as do Portuguese birds. Although not a very distinct form, it is decidedly darker on the upper-parts in a series than the typical bird, has usually a well-defined dark (blackish) upper-breast, broad streaks on the crown, and a thick and deep bill. These characters *as a whole* differentiate it well. The wings of a series from Spain and Portugal measure: 9 males 176-189, 10 females

171-194 mm., thus agreeing as nearly as possible with *G. g. glandarius*.

† *Pyrrhonorax pyrrhonorax* (L.).

Choughs were very common and often in large flocks. We did not shoot any, but all those we saw near enough to identify had red bills. Often, however, they fly at too great a height to distinguish the species. Irby states that the Alpine Chough is common in the higher mountains.

Carduelis carduelis weigoldi Reichenow.

The Goldfinch was fairly common in small flocks, more especially at Panes. This form was described from Portugal, and is the resident bird on the west side south to Algeciras. It is interesting to find it also along the north coast. The eastern half of Spain appears to be inhabited by *C. c. africana*, which has well-marked differences. *C. c. weigoldi* is nearest to *parva*, from which it differs by being of a darker shade of olivaceous-brown on the upper-parts, sides of breast, and flanks. The wings of a series of twenty-four from Algeciras, Portugal, and the Cantabrians measure 70-79 mm., or exactly the same as *parva*.

Carduelis spinus (L.).

We saw a small flock of Siskins, and shot two in some alders at Panes on 16 October. These were doubtless migrants, and Mr. W. C. Tait tells me (*in litt.*) that they have been plentiful this autumn in Portugal.

Carduelis cannabina mediterranea (Tschusi).

Linnets were fairly common, and two which we obtained were, judging by size (wings 75-6) of this form, as apparently are the Linnets in the rest of the Peninsula.

† *Serinus canarius serinus* (L.).

Common.

Pyrrhula pyrrhula subsp.

A young bird just starting to moult from the juvenile plumage was obtained near Potes on 11 October. This was

the only Bullfinch we saw, but I thought I heard one once at Riaño. Judging by this juvenile, the bird must breed in the district, though it is certainly scarce. Irby found it near Potes.

† *Fringilla cœlebs cœlebs* L.

Abundant.

Petronia petronia petronia (L.).

A juvenile in full moult (including the wings and tail) was obtained at Riaño on 25 September and others were seen there, but the bird was not common.

† *Passer domesticus domesticus* (L.).

Common.

† *Emberiza calandra*.

Corn-Buntings were seen near Leon, but not afterwards.

Emberiza citrinella citrinella L.

Emberiza cirrus L.

† *Emberiza hortulana* L.

Emberiza cia cia L.

The Yellow Bunting was rather more common than the Cirl, and as Irby found it common in May and June, it must be a resident in this district. Farther south in the Peninsula it is, I believe, not known to breed. In the valley at Riaño we saw a good many Ortolans, but not elsewhere. Rock-Buntings were fairly common.

Lullula a. arborea (L.).

Wood-Larks were not uncommon, but by no means as numerous as they are in many other parts of Spain and Portugal. These and others from the Peninsula are inclined to be grey on the upper-parts; but they vary, and the forms of Wood-Lark (*L. a. harterti* and *L. a. familiaris*) which have been separated seem to me very unsatisfactory.

***Alauda arvensis arvensis* L.**

One obtained at Panes on 18 October is of the typical form, but may have been a migrant. We saw a few at Riaño one day in a field, but as there were a number of people working there and the Larks were rather wild we did not manage to get any. Irby mentions them as common at Potes in May and June, but we did not see the bird there.

Owing to probable immigration, it would be necessary to obtain birds in the summer to make sure of the race to which the breeding birds belong, and this would be an interesting point to clear up in view of the local races found in Portugal.

Anthus t. trivialis* (L.).**Anthus pratensis* (L.).**

Meadow-Pipits were fairly common, even at the end of September when we reached the district, but these were, I suppose, immigrants, as Irby did not see them at Potes in May and June. There were a good many Tree-Pipits at Riaño, but we saw none at Potes or Panes, but they may have left by 6 October, when we arrived at Potes. From Irby's observations it appears to breed.

†*Motacilla cinerea cinerea* Tunst.***Motacilla alba alba* L.**

Both Grey and White Wagtails were common on the streams. We saw no *M. flava* of any kind.

***Certhia brachydactyla ultramontana* Hartert.**

Tree-Creepers were common.

***Sitta europæa cæsia* Wolf.**

Nuthatches were fairly common and we obtained a good series. These have not the small bill and pale under-parts of *S. e. hispaniensis*, which is found in middle Spain and Portugal. They match *cæsia* in size and colouring, though the under-parts are seldom so richly coloured as the darkest examples of *cæsia*.

Parus major major L.

Great Tits were common. The characters used in separating some of the European forms of Great Tit are so variable individually as to make the distinctions of race of very little value. The series we obtained match typical birds exactly in coloration, while those from Portugal and south Spain are slightly darker and duller. The white wedge on the inner web of the outer tail-feathers is in most of the specimens large as in *P. m. major*, but in two or three examples it is restricted. In Portuguese birds about two-thirds have this wedge much restricted. The bills measure 11–12·5 mm., most being slightly longer than they are in the typical form and of exactly the same size as Portuguese and south Spanish birds. These differences, however, are slight and variable, and I think Portuguese and Spanish Great Tits should all be called *P. major major*.

Parus cæruleus cæruleus L.

Blue Tits were not very common at Riaño, but were more plentiful at Potes and Panes. The series we obtained were of the typical form and very distinct from the smaller, darker, and more brilliant *P. c. harterti*, which inhabits Portugal southwards to Algeciras.

Parus ater vieiræ Nicholson.

While the Nuthatch, Blue Tit, and Crested Tit were unlike the forms found in Portugal, the Coal-Tit was of this distinct Portuguese subspecies. Curiously enough we found the bird only at Riaño. At Potes and Panes we saw none. One cannot, of course, be certain that it was absent from these localities, as all birds, even the Tits, were very silent, but should subsequent observations show that there really is a gap hereabouts in the distribution of the Coal-Tit, a very interesting point will be established, as the form found in the Pyrenees, even on the Spanish side, is *P. a. ater*. (Irby states that Lilford once observed a Coal-Tit near Santander.)

P. a. vieiræ is somewhat like *P. a. britannicus*, but the

rump and flanks are less olivaceous and more rusty-buff, and sometimes the whole under-parts are buff as in the type-specimen, which was at one time thought to be an aberration. The cheeks are usually tinged with yellowish-buff. In the juvenile the sooty-black of the throat extends, as it does in *P. a. ater*, farther on to the breast than in *P. a. britannicus*, but the under-parts are very different from either in tone of coloration, being considerably buff and not so yellow. The wings of a series of adults (9 males, 4 females) from Portugal measure: males 57-59, females 53-56 mm. Those from Riaño (4 males, 3 females) measure: males 58-60, females 59 and one 62. The last is larger than any Portuguese Coal-Tit I have seen, but in colour it is typical *vieire*.

***Parus cristatus mitratus* Brehm.**

Crested Tits, which we found common at Riaño, were much scarcer on the lower ground about Potes and Panes. They were all of the central European form. In Portugal and as far south as Algeciras *P. c. weigoldi* is found, and one bird which I got at Vigo is of this form, as is one from Arosa Bay collected by Surgeon-Admiral Stenhouse, though this is not very typical. I have recently given the distinctions of *P. c. weigoldi* (Ibis, 1921, p. 581), and I may add that the colour of the upper-parts varies somewhat and in some examples is considerably tinged with rust-colour.

***Parus palustris communis* Baldenstein.**

Although Irby mentions the Marsh-Tit as occurring in this district I was surprised to find it comparatively common in the more open parts of the woods near Riaño and Potes, while at Panes it was scarcer. Marsh-Tits from the Peninsula are not represented in any of the collections I have examined, and of recent years its presence in Spain has been regarded as somewhat mythical, notwithstanding Irby's record and Saunders's statement (Ibis, 1871, p. 208) that the bird occurred near Granada and Cordova in spring. In 1919 I obtained one on the Spanish side of the Pyrenees, but this

was in juvenile plumage and could not be assigned to any race. But in the Cantabrians we obtained a series of sixteen in fresh plumage. I have carefully compared these with other Marsh-Tits, and cannot separate them either by colour or by size from series of *P. p. communis* and *P. p. longirostris*. These two forms intergrade so much that I think their distinctions cannot be upheld, and I have therefore adopted the older name *communis*.

***Ægithalos caudatus taiti* Ingram.**

Long-tailed Tits were fairly common and we obtained a good series. A careful comparison of these with good series of Portuguese and Pyrenees birds leads me to the conclusion that they are all the same. I can find no constant difference either in colour or size. This being so, *Æ. c. pyrenaicus* must be regarded as a synonym. The black stripes on the sides of the crown sometimes meet on the forehead and sometimes do not, but they are decidedly broader than in the British bird, to which this form is most akin, while *taiti* has also less pink on the mantle and back, and has a yellow eyelid and orbital ring in the adult. I have not seen specimens of Long-tailed Tits from south of Coimbra in Portugal, and it will be interesting to find the exact range of the very different *Æ. c. irbii*.

***Regulus ignicapillus ignicapillus* (Temm.).**

Fire-crests were fairly common. We saw no Goldcrests. Irby does not mention either species.

***Muscicapa hypoleuca hypoleuca* (Pall.).**

Pied Flycatchers were to be found here and there in the woods at Riaño and Potes, and must, I think, have been the breeding birds of the district (Irby notes it as common in summer), though the adults were all in winter plumage. They were of the typical form and not *M. h. speculigera*, which we had found breeding the year before on the south side of the Serra da Estrella in Portugal. Spotted Flycatchers (*M. striata*), which Irby mentions, had apparently left by the time we arrived as we saw none.

Phylloscopus collybita collybita (Vieill.).**Ph. trochilus trochilus** (L.).

There were a few Chiffchaffs at Riaño and Potes and a good many about Panes, this difference in numbers being perhaps due to altitude. It seems probable that a certain number winter near the coast as they do in Portugal. We did not hear the song, so I am unable to say if it is of the peculiar character of the Chiffchaffs of Portugal and south Spain.

We shot a Willow-Wren at Riaño on 25 September, but did not identify it elsewhere. Irby mentions it as common in May and June, and I think it is not known to breed south of this district. He also states that Bonelli's Warbler was common, and gives a record of the Wood-Wren on 16 May, but we saw neither of these species.

Cettia cetti cetti (Temm.).

Cetti's Warbler was fairly common at Panes, and we obtained two specimens which are typical. We did not observe the bird elsewhere.

† **Hypolais polyglotta** (Vieill.).

We saw a few Melodious Warblers at Riaño and Panes.

Sylvia borin (Bodd.).**S. atricapilla atricapilla** (L.).† **S. communis** Lath.

These species were present, but in very small numbers.

Turdus viscivorus viscivorus L.

The Mistle-Thrush was common, especially on the borders of the higher woods. The two specimens we obtained are greyer on the upper-parts than a series of British birds, but some from Germany and Switzerland are equally grey and this is a variable character.

Turdus philomelus philomelus Brehm.

Song-Thrushes were rather scarce at Riaño, but commoner at Potes and Panes. The five collected are like typical birds,

though inclined to be rather dark. Irby states that the species is common and breeds. Chapman and Buck found it singing in the Sierra de Gredos in mid-May, which points to its nesting in that district.

Turdus merula merula L.

Blackbirds were common. These, as well as a series from Portugal, I cannot distinguish from the typical form.

† **Monticola solitarius.**

We saw a Blue Rock-Thrush in a defile between Riaño and Cangas de Onís, but they were certainly not common in the district.

Cenanthe cenanthe cenanthe (L.).

The only Wheatears we saw were a few of the common species.

Saxicola rubetra rubetra (L.).

Saxicola torquata rubicola (L.).

Whinchats were decidedly scarce and Stonechats not very common. Three of the latter obtained are, I consider, *rubicola*; they are rather darker on the upper-parts than is often the case in this form, but still not so dark and rufous as the British form, which also inhabits Portugal.

Phœnicurus phœnicurus.

Ph. ochrurus gibraltariensis (Gm.).

We saw a very few Common Redstarts at Riaño only, and I think that most had migrated as Irby considered them common. The only bird obtained had the 2nd primary in one of its wings broken off and in the other growing, so that it was impossible to say if its wing-formula was like that of *Ph. ph. algeriensis*, which we had found to be the case in two breeding birds collected in Portugal in the summer of 1920.

The Black Redstart was often to be seen amongst buildings, and was very common on the higher rocky ground, especially about Riaño.

***Erithacus rubecula rubecula* (L.).**

Robins were abundant in all the woods, and eight obtained are like the typical form, while Portuguese birds are like the British *E. r. melophilus*.

***Prunella modularis modularis* (L.).**

Hedge-Sparrows were scarce and had a liking for high ground where there were small bushes, though we also saw a very few lower down near Panes. In Portugal we also found a number high up on the Serra da Estrelia, but they were also present quite low down near Oporto. Three which we shot at Riaño and Panes are not quite so dark as Portuguese birds, which have been separated as *P. m. obscura*.

***Troglodytes troglodytes troglodytes* (L.).**

Wrens were not at all common. They are of the typical form as are Portuguese birds.

***Cinclus cinclus cinclus* (L.).**

Dippers were very abundant on all the streams from about 3500 ft. at Riaño to nearly sea-level at Panes. We collected a large series, which I have very carefully compared with equally good series of *C. c. pyrenaicus* and *C. c. cinclus*, and find that these Cantabrian birds are indistinguishable from the Scandinavian. *C. c. pyrenaicus* is certainly very nearly allied and there is slight individual variation, but the series of autumn skins of *C. c. pyrenaicus* at Tring is so good that I have no hesitation in stating that the Cantabrian birds are distinctly darker (black-brown) on the crown, mantle, and back. As in *C. c. cinclus* and *C. c. pyrenaicus*, there is sometimes a little dark chestnut on the belly, which is otherwise very black. This surprising result provides an interesting problem, especially in conjunction with the fact that the few skins available of Dippers from the Sierra Guadarrama in middle Spain and the Sierra Nevada in south Spain seem indistinguishable from *C. c. aquaticus*, a form with much paler upper-parts and a chestnut belly, which inhabits France and Germany. We thus have in Spain two "repetitions" of forms separated geographically by other forms. The

Dipper found in the north of Portugal, of which I have four specimens kindly given to me by Mr. Tait and Senhor Lopes, does not differ from the Cantabrian birds.

† *Hirundo rustica*.

† *Delichon urbica*.

We saw a few Swallows passing over at Riaño and a few with House-Martins at Potes on 7 October, but the breeding birds had left before we arrived.

† *Alcedo atthis ispida* L.

We saw one or two Kingfishers on the main streams at Riaño, Potes, and Panes.

Picus viridis sharpei (Saunders).

Green Woodpeckers were fairly common, but very shy and difficult to get. Three which I shot have the sides of the neck and upper-breast not so grey as is often the case. They are, however, like the type specimen which came from near Madrid. Unfortunately most of the specimens in the British Museum have no date, but I fancy the greyness is produced by wear, and probably the more green and less grey birds are freshly moulted autumn ones. Three autumn birds, which Mr. Tait has sent me from north Portugal, agree with my Cantabrian ones. The wings of a series of nine males measure 157–164 mm. or about the same as *P. v. virescens*, but the bills are rather smaller, measuring in the males 41–46 and in eleven females 40–43 mm. against ♂ 43–50, ♀ 43–48 in *P. v. virescens*.

Dryobates major hispanus (Schlüter).

There were a few Great Spotted Woodpeckers in the woods near Riaño and Potes, but we did not notice the bird at Panes. We obtained only two. These, and three others which Mr. Tait has sent me from Portugal, have the tail-feathers closely barred (thus showing less white than in *D. m. pinetorum*), while the under-parts are dark, though sometimes examples of *pinetorum* have equally brown under-

parts. The white spots on the secondaries are not so restricted as they are usually in specimens from southern Spain.

Dryobates medius lilianæ.

Dryobates medius lilianæ Witherby, Bull. B. O. C. vol. xlii. 1922, p. 49.

The Middle Spotted Woodpecker was fairly common at Riaño and Potes, but we did not see it at Panes, which is perhaps at too low an elevation, though at Potes it was fairly common in a valley only about 1500 ft. above sea-level. We found that it was especially fond of walnut-trees. It was much more confiding than other Woodpeckers, and we twice saw one searching rotting timbers in the roof of a house. Irby mentions it as abundant near Potes, but since his time the presence of the Middle Spotted Woodpecker in any part of the Spanish Peninsula seems to have been lost sight of. It is not known to inhabit the Pyrenees, and its absence between the Alps and the Cantabrians forms a gap in its distribution which may account for the differentiation of the Cantabrian form which I have described elsewhere. It may be found in other parts of Spain, as Saunders, on the authority of Guirao, says it is common in Murcia (Ibis, 1871, p. 66).

***Strix aluco sylvatica* Shaw.**

We saw a few Tawny Owls and obtained two at Riaño, but did not see or hear any Owls elsewhere. They are, however, easily overlooked, and all birds as I have already mentioned were very silent.

Tawny Owls from the Spanish Peninsula are, I think, like the British form, though more specimens should be examined before we can be sure. Mr. W. C. Tait has very kindly sent me six from Portugal. The wings of these measure:—four males 250, 255, 260, and 268 mm., and two females 265, 268, while the two females from Riaño measure 260 and 265. In size therefore they are like *sylvatica*, and only the one male reaches my measurements (males 265–290,

females 270–305) of *S. a. aluco*. In colour one of those from Portugal is very black and grey (a type which is very rare indeed in Great Britain), three others are rather browner, and two are rufous. Of the Cantabrian birds one is rufous and the other grey-brown.

† **Falco tinnunculus.**

Kestrels were fairly common, but except for these and Common Buzzards, Hawks were very scarce. A large Falcon seen in the distance above some rocky hills near Potes was probably a Peregrine.

Buteo buteo buteo (L.).

Common Buzzards were fairly plentiful especially at Panes, but we did not identify any Honey-Buzzards, which Irby found common in summer in the Potes district. An adult male *B. b. buteo*, which I shot, has a considerable amount of rufous on the tail, and the wing measures 375 mm.

Accipiter nisus nisus (L.).

We saw two or three Sparrow-Hawks at Riaño and at Potes, but they seemed to be very scarce. An adult female, which I shot at Riaño, has the upper-parts very dark grey without a tinge of brown, while the under-parts have close and very dark bars.

† **Milvus milvus.**

We saw only one Red Kite (at Riaño) and no Black Kites.

† **Ciconia ciconia.**

There is a single Stork's nest at Riaño, but the birds had left before we arrived.

† **Columba palumbus.**

We saw a few Wood-Pigeons and were told that they were very numerous in some autumns.

† **Vanellus vanellus.**

Two Lapwings at Riaño on 27 September were the only ones we saw.

†*Tringa hypoleuca.*

We saw a few Common Sandpipers on the river at Riaño and also at Panes. Chapman and Buck state ('Wild Spain,' p. 181) that they found a nest and four eggs on 23 May in the province of Santander, but the exact locality is not given.

†*Alectoris rufa.*†*Perdix perdix.*

We occasionally heard a Red-legged Partridge (probably of the form *A. r. hispanica*), but never put one up, and I think they must be very scarce, as we offered a good price to the local sportsmen for Partridges of any kind and were not able to obtain any.

I saw three Grey Partridges (probably *P. p. hispaniensis* = *charrela*) near Riaño, but unfortunately missed them with both barrels. These birds were at the base of a rocky peak on a steep grassy slope above the woods. When put up they flew very low round the curve of the mountain, and after being shot at took refuge on a small slope, where there was a little grass among the rocks. From there they flew round to the other side of the mountain, where I was unable to follow without making a long detour far down into the valley and up again. The low, curving flight of the birds and the ground they inhabited reminded one more of Ptarmigan than Grey Partridge, but both here and in the Pyrenees these Partridges frequent the high ground. They seemed to be very scarce, for these were the only ones we saw, and I toiled over much apparently suitable ground in the hope of finding more.

†*Coturnix coturnix.*

We heard Quails occasionally at Riaño, and saw half-a-dozen shot there by local sportsmen.



RIAÑO



VIEW FROM ABOUT 4,000 FT. ELEVATION,
NEAR RIAÑO



THE RIVER ESLA NEAR RIAÑO.



POTES WITH THE PICOS DE EUROPA
IN THE BACKGROUND.